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# USSR STANDARD FOR LUBRICANT GREASES (GOST 1033-41)

(Petroleum Industry B 24)

## I. DEFINITION AND DESIGNATION

1. Lubricant greases [Russian "solidol"] are consistent lubricants fabricated from refined mineral oils thickened with calcium soaps.

2. Lubricant greases are used for lubricating friction surfaces of machinery when thin lubricants are not applicable or advisable.

## II. CLASSIFICATION

3. This standard establishes four grades of lubricant greases: L, M, T, and Press-solidol.

## III. TECHNICAL SPECIFICATIONS

4. Appearance of lubricant greases: oily paste ranging in color from light yellow to dark brown.

5. Homogeneity of lubricant greases: when spread with a spatula on a glass plate, lubricant grease must not show any trace of nonuniformity, nor contain any foreign matter or clots of soap.

6. Physicochemical properties of lubricant greases must meet the following requirements:

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATE | X | NAVY | X | NSRB | DISTRIBUTION | | | | | | | | |
| ARMY | X | AIR | X | FBI | | | | | | | | | |

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| Physicochemical Properties | Grease L | Grease M | Grease T | Press-solidol |
|---|---|---|---|---|
| 1. Soap content, not less than | 11% | 14% | 18% | 9% |
| 2. Drop point (Ubbelohde), not less than | 70° C | 80° C | 90° C | 75° C |
| 3. Penetration (Richardson), at 25° C | 230-290 | 190-230 | 150-190 | 330-355 |
| 4. Water content, not over | 2% | 2.5% | 3% | 1.5% |
| 5. Content of free alkali, not over | 0.2% | 0.2% | 0.3% | 0.1% |
| 6. Mechanical impurities, not over | 0.6% | 0.6% | 0.6% | 0.4% |
| 7. Mechanical impurities, insolule in hydrochloric acid | None | | | |
| 8. Corrosion test on metal plates | Passes | | | |
| 9. Viscosity of mineral oil in lubricant greases at 50° C (Engler) | 2.8-5.5 | 5.5-6.5 | 5.5-6.5 | 5.5-6.5 |

NOTE:

i. Penetration (Richardson) of L lubricant grease delivered to the People's Commissariat of Defense USSR must be 250-290.

ii. As required by the People's Commissariat of Defense and the People's Commissariat of the Navy content of mechanical impurities in L lubricant greases and M lubricant greases must not exceed 0.4%.

iii. For cooperative plants and local industry, content of mechanical impurities up to 0.8% is allowed in L, M, and T lubricant greases.

iv. No sand content is allowed.

v. Viscosity determination of mineral oil in lubricant greases is made prior to boiling.

## IV. RULES OF INSPECTION

7. For inspection of delivered lubricant greases, samples are taken as prescribed by OST NKTP 7872/2292, M.I. 1v-37 (replaced by GOST 2517-44).

## V. TESTING METHODS

8. Determination of soap content is carried out as prescribed by OST NKTP 7872/2292, M.I. 21v-36.

9. Determination of drop point is carried out as prescribed by OST NKTP 7872/2292, M.I. 7zh-36.

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10. Determination of penetration is carried out as prescribed by OST NKTP 7872/2292, M.I. 6a-36.

11. Determination of water content is carried out as prescribed by OST 17872-38, M.I. 19k (replaced by GOST 1044-41).

12. Determination of free alkali content is carried out as prescribed by OST NKTP 7872/2292, M.I. 25k-37.

13. Determination of mechanical impurities is carried out as prescribed by OST NKTP 1036-41.

14. Determination of mechanical impurities insoluble in hydrochloric acid is carried out as prescribed by OST NKTP 7872/2292, M.I. 19i-37.

15. Corrosion test on metal plates is carried out, as prescribed by OST 1037-41, on steel plates, Types 40, 45, and 50 (OST NKTP 7123, replaced by GOST B-1050-41), and on brass plates, Type LS 59-1 (GOST B-1019-41). Plates must be submerged in lubricant grease for 72 hr.

16. Determination of viscosity is carried out as prescribed by OST VKS 7872, M.I. 5g-35.

## VI. PACKING AND MARKING

17. Lubricant greases are delivered to consumers in clean wooden barrels (as prescribed by GOST 174-41), in tin or iron containers, in solid and dry batten boxes, or in kraft paper bags.

18. Each barrel, box, or bag must carry a stenciled label, and each container provided with a tag, marking name of the plant, grade of the lubricant grease, lot number, gross and net weight, acid number of fatty acid components, and GOST 1033-41.

## VII. STORAGE AND HANDLING

19. Lubricant greases are stored in the same package in which they are handled and delivered.

20. Storing space for lubricant greases must be protected from the sun and from precipitation.

Proposed by the People's Commissariat of Petroleum Industry USSR.

Approved by the All-Union Committee on Standards, 20 September 1941.

Effective 20 September 1941.

Replaces OST 10802-40.

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